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NUCLEAR SHAPE ISOMERS

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We calculate potential-energy surfaces as functions of spheroidal (ϵ_2), hexadecapole (ϵ_4), and axial-asymmetry (γ) shape coordinates for 7206 nuclei from $A = 31$ to $A = 290$. We tabulate the deformations and energies of all minima deeper than 0.2 MeV *and* of the saddles between all pairs of minima. The tabulation is terminated at $N = 160$. Our study is based on the FRLDM macroscopic-microscopic model defined in Atomic Data and Nuclear Data Tables [**59**, 185 (1995)]. We also present potential-energy contour plots versus ϵ_2 and γ for 1224 even-even nuclei in the region studied. We can identify nuclei for which a *necessary* condition for *shape isomers* occurs, namely multiple minima in the calculated potential-energy surface. We find that the vast majority of nuclear shape isomers occur in the $A = 80$ region, the $A = 100$ region, and in a more extended region centered around ^{208}Pb. A calculated region of shape isomers that has so far not been extensively explored is the region of neutron-deficient actinides "north-east" of ^{208}Pb.